

PATENT

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Claims:

1. An apparatus for positioning a tong, comprising:
a single cantilevered extendable structure, the tong attached to one end of the extendable structure;
a piston and cylinder assembly for extending or retracting the extendable structure; and
a mounting assembly coupled to an opposite end of the extendable structure.
2. The apparatus of claim 1, wherein the extendable structure is telescopic.
3. The apparatus of claim 2, wherein the extendable structure is pivotable about a vertical axis.
4. The apparatus of claim 2, wherein the extendable structure is pivotable about a horizontal axis.
5. The apparatus of claim 2, wherein the telescopically extendable structure comprises an outer barrel and an inner barrel.
6. The apparatus of claim 5, wherein the telescopically extendable structure further comprises an intermediate barrel.
7. The apparatus of claim 6, wherein at least a portion of the inner barrel is slidably mounted in the intermediate barrel and at least a portion of the intermediate barrel is slidably mounted in the outer barrel.
8. The apparatus of claim 5, wherein the mounting assembly comprises:
a base; and
a carriage pivotally attached to the base, wherein a portion of the outer barrel is disposed on the carriage.

1. The apparatus of claim 8, wherein the tong is movably attached to the inner barrel.
2. The apparatus of claim 9, further comprising a clamp assembly for securing the outer barrel to the carriage.
3. The apparatus of claim 10, wherein the outer barrel is movable between a first position and a second position relative to the carriage.
4. The apparatus of claim 1, wherein the mounting assembly comprises:
a base; and
a carriage pivotally attached to the base, wherein a portion of the extendable structure is disposed on the carriage.
5. The apparatus of claim 12, further comprising a clamping assembly for securing the extendable structure to the carriage.
6. The apparatus of claim 13, wherein the clamping assembly is releasable connected to the carriage.
7. The apparatus of claim 14, wherein the extendable structure comprises an outer barrel and an inner barrel.
8. The apparatus of claim 15, wherein the extendable structure further comprises an intermediate barrel.
9. The apparatus of claim 16, wherein at least a portion of the inner barrel is slidably mounted in the intermediate barrel and at least a portion of the intermediate barrel is slidably mounted in the outer barrel.
10. The apparatus of claim 14, wherein the extendable structure is pivotable about a vertical axis.

19. The apparatus of claim 14, wherein the extendable structure is pivotable about a horizontal axis.

20. The apparatus of claim 1, further comprising a motor actuatable to adjust the position of the extendable structure with respect to said mounting assembly.

21. The apparatus of claim 1, wherein the piston and cylinder assembly has two stages.

22. The apparatus of claim 21, wherein the piston and cylinder assembly is at least partially disposed on the extendable structure.

23. The apparatus of claim 21, wherein the piston and cylinder assembly is used to move the extendable structure horizontally.

24. The apparatus of claim 1, wherein the tong is movably attached to the extendable structure.

25. An apparatus for positioning a tong, comprising:

a telescopically extendable structure, including:

 a single cantilevered structure; and

 a piston and cylinder assembly at least partially disposed on the single cantilevered structure; and

 a mounting assembly coupled to one end of the telescopically extendable structure, wherein the tong is movably attached to an opposite end of the telescopically extendable structure.

26. The apparatus of claim 25, wherein the mounting assembly comprises:

 a base; and

 a carriage pivotally attached to the base, wherein a portion of the telescopically extendable structure is disposed on the carriage.

27. The apparatus of claim 26, further comprising a clamping assembly for securing the telescopically extendable structure to the carriage.
28. The apparatus of claim 27, wherein the clamping assembly is releasable connected to the carriage.
29. The apparatus of claim 28, wherein the single cantilevered structure comprises an outer barrel, an intermediate barrel, and an inner barrel.
30. The apparatus of claim 29, wherein at least a portion of the inner barrel is slidably mounted in the intermediate barrel and at least a portion of the intermediate barrel is slidably mounted in the outer barrel.
31. The apparatus of claim 28, wherein the telescopically extendable structure is pivotable about a vertical axis.
32. The apparatus of claim 28, wherein the telescopically extendable structure is pivotable about a horizontal axis.
33. The apparatus of claim 25, further comprising a motor actuatable to adjust the position of the telescopically extendable structure with respect to said mounting assembly.
34. The apparatus of claim 25, wherein the piston and cylinder assembly has two stages.
35. An apparatus for positioning a tong, comprising:
a single cantilevered extendable structure, the extendable structure having a variable length and the tong attached to one end of the extendable structure;
a motive assembly for changing the length of the extendable structure; and
a mounting assembly coupled to an opposite end of the extendable structure.

36. The apparatus of claim 35, wherein the tong is movably attached.
37. The apparatus of claim 35, wherein the motive assembly comprise a piston and cylinder assembly.

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